



HELP

ASK OUR TECHNICAL EXPERTS

HELPPFILE

Windows XP keeps freezing

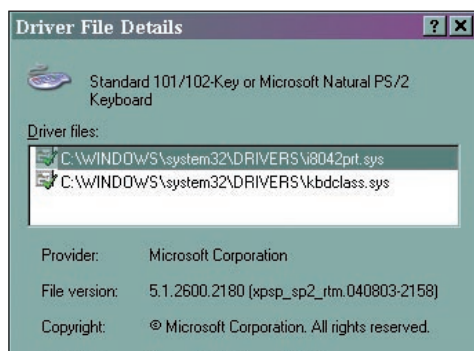
Q I have a severe problem with my Windows XP computer. It constantly freezes whenever I touch a key on the keyboard. In Device Manager there is a keyboard driver error that reads "Keyboard driver cannot start, Code 39". This machine had been working fine for the past year, but one morning it wouldn't start properly.

I've tried searching on the internet using the error code, but the suggested solutions don't seem to work. I've also tried running various anti-virus and anti-spyware applications. I've booted to the Recovery Console, tried bootcfg, chkdsk/p and reinstalled the keyboard drivers. I could rebuild the system, as I have backups, but that is the last resort.

Philip Sandamas, philip.sandamas@blueyonder.co.uk

A Code 39 in Device Manager means that Windows cannot read one of the drivers for the device in question because it is corrupted or missing. In simple cases, it is sufficient to right-click on the device with the problem, select Uninstall and reboot. The device should be detected on startup and the correct driver will be installed.

If that doesn't work, your keyboard may be physically damaged. Try a different keyboard, remembering to turn off the computer before you connect or disconnect any PS/2 device.



▲ Corrupt keyboard drivers can cripple an otherwise solid system

If this doesn't work, possibly because some other software has installed its own filter driver that is corrupt or no longer present, then the error is occurring when the Windows Kernel cannot load this driver. In this case, you're going to need to edit the Registry. However, first you'll need a way to type. Click on Start, All Programs, Accessories, Accessibility and select On-Screen Keyboard. This will give you a way to type using the mouse.

The following procedure should be safe if you change only the keys as instructed. However, if you are not familiar with editing the Registry, it is a good idea to make a backup first using System Restore. Click on Start, All Programs, Accessories, System Tools, System Restore and follow the instructions.

REMOVING BAD REGISTRY ENTRIES

Click Start, Run. Then, using the onscreen keyboard, type in regedit and click OK. Make sure the cursor is on My Computer at the top of the left column, then click on Edit, Find. Type in the word kbdclass and untick the the Keys and Values options (leave the tick next to the Data Search option), then click Find Next. There may be several occurrences of kbdclass, but you are looking for one in a value called UpperFilters. If you see anything else, click F3 (Find Next) to keep looking.

When you find the UpperFilters value, see if there is anything before or after kbdclass in its data string. In a standard Windows installation, this value should contain kbdclass on its own. Also check under the same Registry key (folder) to see if there is a line called LowerFilters. If there is, you can delete it. LowerFilters will occur for other devices (notably CD drives), so don't delete LowerFilters from anywhere other than the keys where you found kbdclass. Keep pressing F3 until you find no other occurrences. Next, close the Registry Editor, go back to Device Manager, find your keyboard in the list (which should still be reporting a Code 39 error) and uninstall it. Then restart your computer. Your keyboard will work upon rebooting.

Keyboard filter problems may be associated with a bug in the installer for VMware's virtual machine software, some remote desktop programs or even a keylogger called Invisible KeyLogger Stealth (iks.sys). Most keyloggers, however, do not use this technique.

CONTACTS

PLEASE EMAIL THE RELEVANT DEPARTMENT

helpfile@computersshopper.co.uk
for all PC problems

officehelp@computersshopper.co.uk
for help with office applications

YOU CAN ALSO WRITE TO US AT:

Help
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W1T 4JD

Feedback Can I build my own super computer?

✉ In *Helpfile*, Shopper 242 you advised Rebecca Aggett on distributed computing. However, having read her email this does not seem to be quite what she needs. I would suggest that she look into the concept of Beowulf clusters. This is similar to distributed computing, but is essentially one super computer that is constructed by linking several other computers together locally. The only downside to the Beowulf cluster is that normally it consists of several identically specified systems linked together.

Julian Hall, jules@kaotic.co.uk

A The solutions we mentioned do work, but a Beowulf cluster might be more appropriate. There's no need for all the systems to be identical. If you find an old 486, you could grab it and add it to the cluster. You still need to develop applications specifically to run on the Beowulf cluster, but developer's toolkits are available.

For more information, you should use Google to search for 'Beowulf clusters' (leaving out 'clusters' will bring up lots of hits on the classic saga of *Beowulf*). You should also visit www.beowulf.org. To build a Beowulf cluster, try www.phy.duke.edu/~rgb/Beowulf/beowulf_book.php.



Why is my router not fast enough?

Q I have a networked system connected to the internet via a 20Mbit/s Virgin Media broadband account that I pay quite a lot for every month. With the arrival of the BBC iPlayer, the speed at which this connection works has become more important to me. Having run the various speed tests available on the internet, I can't seem to achieve more than around 6Mbit/s, irrespective of the time of day.

I understand the logic of 'up to' speeds, and that if more people are online the connection is slower, but it seems that whenever I use it the speed is never above the 6Mbit/s mark, even in the middle of the night. This leads me to wonder if there is something in my setup that could be causing the problem.

Virgin recently replaced my modem, in accordance with the recommendations on its support pages, and it connects to the network via an Ethernet connection. The computers on the network all run Windows XP and connect via a Netgear RT314 Gateway Router. I've looked on the Netgear site, and this product is now listed as 'end of life' (EOL). I wondered if this was causing a bottleneck?

I know there has recently been a lot of press coverage about how these products are advertised, and it seems a bit rich to use the 20Mbit/s figure if this is never available. The 'up to' get-out isn't fair, either. I'm happy to take this up with Virgin, but I want to be sure that there is nothing in my setup that could be causing the lack of speed.

If you could advise on the router, or anything else I can check, it would be much appreciated.

Michael Lockett, m.lockett@ipmcare.co.uk

A Most broadband services use ADSL over copper telephone wires. These have a limited speed that is dependent on the distance from the telephone exchange and the quality of the phone lines. Virgin Media's cable and fibre-optic services use a purpose-built network with, in your case, a fibre-optic connection to your house. This is state of the art and should allow a significantly higher speed than cable or ADSL.

Even if the actual fibre-optic connection is fast, there are lots of places online where congestion can slow down your downloads. Maybe the website you

are downloading from limits the bandwidth that can be used by each customer. Perhaps congestion in internet routers, particularly at your own ISP, limits bandwidth. Indeed, there may even be restrictions with your own equipment.

Start testing speed by connecting one PC directly to the Virgin Media modem without using a router. After connecting your PC to the modem, you must turn the modem off and on again before it recognises the PC. Your PC also needs a new IP address, and usually Windows XP or Vista will realise that the Ethernet has been disconnected and reconnected; it will then automatically obtain a new IP address. However, you may have to right-click on the Network Connection icon in the taskbar and choose Disable, then Enable to force it to obtain a new IP address. You should then be able to test the real speed of your connection.

OLDER AND WISER

A common problem with older routers is that the WAN port on the router used only the old 10 Base-T Ethernet standard, limiting its speed to a little under 10Mbit/s. This was fine until consumer broadband connections started to exceed this speed. We believe Netgear's RT314 WAN port had this limit, though the ports on the LAN side of the router run at 100Mbit/s, so your guess is correct. With your present router, you won't be able to take advantage of the full speed of the connection. A new router should improve speed greatly. Just choose your router carefully.

Even if your router has a 100Mbit/s WAN port, the speed of the physical interface and the throughput of a device are two different things. You may have a fast WAN port but still not be able to pass more than 10Mbit/s through a router. Netgear's FVS318 and FVS114 cannot handle 20Mbit/s throughput.

If speed with a new router remains much slower than when connecting one computer directly, you must check your entire network. Often a bad network card or switch can drastically slow down network traffic. Connect a computer directly to the modem to ensure that there is no external problem, then try connecting the router but connect only that same computer to the router's LAN side. Reconnect other devices one at a time. If performance slows down after a certain device is connected, it is the cause of the fault.

Your experts

HELPFILE

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Paul Mullen

With 27 years of PC experience as a power user, programmer and IT consultant, Paul Mullen answers all PC problems, tackling hardware, system and security issues.



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OFFICE HELP

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Kay Ewbank

Database developer and productivity expert Kay Ewbank offers help with office applications.



officehelp@computershopper.co.uk

CONTACTS

Please contact the relevant department at the email address listed above. You can also write to us at:

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Please try to give full details of your problem. We need an email address or daytime and evening telephone numbers in case we need more information.

Although the policy of *Computer Shopper* is not to publish readers' email addresses, we include them in Help so that other readers with experience of similar problems can share their solution (please also cc any comments to the relevant Help department above). If you would prefer not to have your email address published, please say so. ➔

Memory upgrade for Ultima PC

Q I have a six-year-old Mesh Matrix Ultima 1.4GHz desktop PC, which I've already upgraded to 512MB of RAM. It uses Windows XP Professional Edition, and has an Asus A7A266 SocketA motherboard and an ALIMaGiK 1 chipset. It has a two-256MB 184-pin DIMM memory configuration. The Asus handbook says the maximum total memory is 2GB, provided the DIMMs can handle the specified SDRAM MHz. I find this confusing. What's the maximum I can safely use? I think you answered a similar question a few years ago, saying this type of motherboard can handle 768MB, but I can't find the magazine.

Eric Atkinson, atkineric@btinternet.com

A Your computer has an unusual motherboard, which has memory slots for both the older PC133 SDRAM and the newer DDR memory modules. There are three slots that will take PC133

memory, and two slots for DDR memory. However, you must use one or the other: you can't mix them.

In 2001, when this board came out, DDR memory was faster but very expensive. Now it is the obsolete PC133 memory that has become expensive, while DDR is cheap.

Although the manual claims this board can handle 3GB of PC133 memory, in practice it was fussy, and there were problems when the chips in each slot were any capacity above 256MB. This may be where the 768MB figure came from. In any case, while 1GB of PC2700 DDR memory will cost you £33 including VAT from Crucial, a 1GB stick of PC133 memory is likely to cost three times as much.

The practical limit is 2GB using two 1GB PC2700 184-pin DIMMs. DDR memory is backwards-compatible, and as the original specification of this motherboard required for PC2100 memory, you can use any DDR memory rated for this speed and faster.

Vista's Movie Maker won't run

Q I can understand why Vista's Aero interface and Flip3D can be extremely hardware intensive, but I'm surprised that my PC isn't up to running Windows Movie Maker.

I tried to run the versions of Windows Movie Maker and DVD Maker that come with Vista on a PC that has Intel's GMA900 graphics (a DirectX 9-capable video system that won't run Aero). This error message appears with both applications: "[Windows Movie Maker/DVD Maker] cannot start because your graphics card does not support the required level of hardware acceleration, or hardware acceleration is not available."

Aero and Flip3D are one thing, but why won't Vista's Movie Maker and DVD Maker run? I clicked the Help link, and I got this message: "To start and run Windows Movie Maker, the graphics card on your computer must support DirectX 9 with video drivers for Windows Vista. To learn whether your current graphics card supports Windows Movie Maker, check the documentation that came with your computer or visit the graphics card manufacturer's website."

The GMA900 chip uses only an XDDM driver, but surely as long as the graphics system is DirectX 9-compatible and has the driver installed properly, it should be OK?

Other DirectX 9 applications – for instance, 3D games such as The Sims 2 and The SpongeBob SquarePants Movie – work fine, as does the transparent Bubbles screensaver, although only an XDDM driver is installed.

Finally, I heard that some of Windows Movie Maker's effects and transitions use 3D rendering, but why is the program so picky about hardware requirements just to initialise? Also, why does DVD Maker need powerful graphics just to burn movies to a DVD?

Daniel Johnson,

johnson.dantheman@googlemail.com

A Editing movies is one of the most video-intensive tasks you can perform, so it makes sense that it should use a graphics card's hardware acceleration features as much as possible. This seems to be a far more worthwhile use of hardware acceleration than simply displaying semi-transparent windows. As you are aware, Intel's GMA900 graphics does not properly support Vista's hardware-acceleration features. Therefore, if you want to make extensive use of Windows Movie Maker, you should add a better graphics card with Vista-compatible drivers that support hardware acceleration.

However, if you intend to edit video only occasionally then you are in luck, because



▲ Vista's version of Movie Maker includes some 3D effects that require hardware acceleration

Microsoft has come up with an answer. Vista users who have Windows Movie Maker but get this message can downgrade Vista's version to version 2.6, which is based largely on the Windows XP version. Either visit <http://tinyurl.com/2mgxem> or search the Microsoft Download Center for Movie Maker.

Bear in mind that this 'downgrade' will work only on a Vista system that already has Windows Movie Maker installed. Microsoft warns that you should not install it if Vista's Movie Maker runs on your system. This version omits some of the more advanced effects, which are those that make the most use of the graphics card's acceleration features.

Figuring out the MSConfig startup utility

Q I've been using Windows XP for 18 months, and the list of programs that start when Windows loads has grown. Unticking the boxes of programs not needed at startup is often recommended, but when I try to access the Startup tab in MSConfig I get an 'Access Denied' error message. The message says that I may need to log on using an Administrator account.

However, I have the sole account on the computer and am listed as Administrator in the User Accounts section of the Control Panel. The error occurs whichever entry I try to disable. As far as I am aware, there are no problems with any other operations reserved for use by an administrator. So how can I get into the MSConfig startup utility?

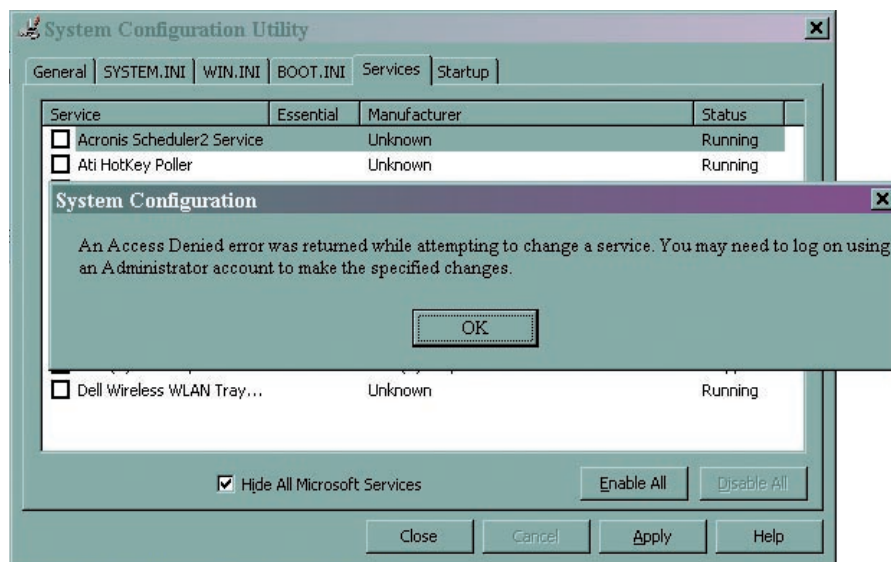
Eddy Morgan, eddy.morgan@btinternet.com

A The message is rather misleading, as you are probably logged on as an administrator and should be able to make changes. It sounds like a service has been installed with restricted permissions, which prevents even administrators using MSConfig (or the Services Management Console) to change its settings. Oddly, the error shows up even when you try to change unrelated entries.

While this kind of problem could be caused by a virus or spyware, it is more likely to be the result of some poor programming by a driver developer at HP. A service called PML Driver HPZ12, which comes with many HP All-In-One and other printers, has been found to cause this error message.

It seems that when HP first started to include this service with its printers, the installer used lax permissions that would allow a Trojan program to substitute its own program instead of the service provided by HP. When HP fixed this security bug, rather than simply correcting the original error, it chose to install the service with restricted permissions and this prevents you changing its status, except through the Registry Editor. That is what is causing the error in MSConfig.

If you have this service, it should be possible to fix the problem by using RegEdit. Click Start, Run and type regedit then click OK. Click on the '+' signs in the left-hand column to navigate to HKey_Local_Machine\System\CurrentControlSet\Services\PML Driver HPZ12. Then, in the right-hand window pane, you should see a value called Start, which should have the value 2 (automatic). Change this to 4 (manual), exit RegEdit and then reboot. After a reboot, the error should go away and printing should not be affected.



▲ This 'Access Denied' message is likely the result of dubious programming by a driver developer

How reliable is Vista System Restore?

Q I have Vista Home Premium running on my desktop PC. I also have Vista Home Basic on my laptop. The laptop is stable and problem-free but the desktop, which runs the 64-bit version of Windows on a Sempron 3200+ 64-bit processor, is a nightmare.

To get this computer to boot properly in a particular session, I must restart the computer then shut it down immediately in the preceding session, which is hardly productive. Without doing this, it simply won't start. On two occasions, the BIOS couldn't read the hard disk. I have to keep the installation disc in the DVD drive all the time. This tries to repair the computer, but never does. On its second attempt, it offers me System Restore and I have to use this. But how reliable is System Restore?

I ask this because of a recent experience. I closed a session, having worked on just two files. The next session wouldn't boot, so I used the installation disk and went down the System Restore route. One file from the previous session was there, but the other file was not. Instead, I found an earlier version.

Just now the system has failed again. This time was the most problematic so far, and perhaps the most revealing. I restarted my system prior to my intended shutdown, as has become my usual practice. This time, the system locked on being restarted at the point where the Windows progress bar appears. I pressed the reset button on my computer and the next restart caused Chkdsk to kick in after the progress bar appeared. This then claimed to delete a number of corrupt segments.

One further restart, and Windows again failed to load. Instead, the Recovery Manager

appeared. I chose to restart Windows normally and this failed. Another restart presented the same screen, so I chose to use a previous good configuration. This too failed to start Windows.

At this point, a blue screen informed me that it could not 'load the hive' and that it was making a crash dump. I didn't get the full path, but it was in the Windows folder and ended 'config/sam', which was said to be missing or corrupt. This has been the pattern of claims by Windows. The Registry files are said to be missing or corrupt, when clearly they are not. The need to delete corrupt segments is also worrying. Yet sometimes the system does start properly, and it runs fine once loaded.

The numerous updates I have applied do not appear to fix my problems. It is also clear that something must be changing the boot sector on my drive. I do not suspect a virus, though. I feel like a beta tester when I'm a fully paid-for OEM licensee.

Gerry Walker, meyellowbelly@talk21.com

A If Windows says that Registry files are missing or corrupt then they most likely are. The question is, why are they getting corrupted? The corrupt segments that Chkdsk discovered were most likely the result of you pressing the reset button while the computer was writing to the hard disk.

The most obvious cause of missing or corrupt Registry files is related to hardware. Files could be corrupted by a faulty hard disk, by faulty memory changing data before it has been written to disk, or several other faults. It could even be down to a bad IDE cable, or damaged motherboard capacitors. It is a good idea to run hardware diagnostics, if your computer manufacturer supplied them, or at least memory and disk diagnostics.

The other issue, which was fairly common with Windows 98 and 2000 but does not usually occur on newer operating systems, is that files may be corrupted because the computer is turning off too quickly before it has finished writing the Registry files to disk. The Registry is the last thing written to disk during a shutdown process, so is most likely to be corrupted by this occurrence.

The cause could be a faulty device driver or an unusually slow hard disk. It could even be caused by an operating system tweak that was intended to speed up shutdowns. Such tweaks often reduce the time given to services to shut down. Shutting down too fast makes data loss more likely.

System Restore only restores system files, not user documents. So if one of the documents you were working on now appears as an old version, chances are the new version was never properly saved to disk, in the same way that the Registry files are not getting written properly.

DRIVER ISSUES

Run Windows Updates and include checking for optional updates, which may include updated drivers. Check with your computer manufacturer for driver updates, too. Sometimes anti-virus software slows down disk writes by scanning everything being written to disk, and this may cause the problem. Disconnect from the internet, then try disabling your anti-virus software.

The 64-bit version of Windows XP was unreliable, mainly due to flaky device drivers. Microsoft promised that the 64-bit version of Vista would be better, but there still seem to be lots of driver-related issues. If you believe your hardware is working properly, try installing the 32-bit version of Vista on a different partition and see if that works better.

Has USB damaged my keyboard?

Q I recently repaired my eMachines PC by replacing the motherboard with an ASRock P4VM890. All went well, until I plugged a Kingston Data Traveller 100 USB memory stick into a rear USB socket, which is shared with a socket on the front panel containing a D-Link wireless USB adaptor. The memory stick failed, as did the keyboard. A replacement keyboard restored operations for a while, but has also failed. It is an old five-pin DIN type attached with a USB adaptor. Was this coincidence, with the old keyboard being unsuitable, or have I damaged the motherboard? I am reluctant to risk another keyboard.

The motherboard manual says the two sockets will not work together, but it does not say that this will cause damage.

John Nelson, j.c.nelson@btinternet.com

A Besides the six USB ports on the back, your motherboard has two sets of headers for connecting front-panel USB ports. The header at the bottom, near the SATA connectors and PCI slot 3, gives an

additional two USB ports, making eight in total. The other header, located behind the backplane USB ports, shares a connection with two of these. As the manual says, you can't use both the front and back USB connections (which are connected to the same port) simultaneously.

However, we don't see how accidentally plugging in two devices would produce a short circuit, such as you describe, if the cable had been wired correctly. We wonder if the front-panel connector cable from your case matched the pin-out of these connectors? We've seen lots of variations in the pin-out of USB headers.

Most manufacturers, including ASRock, place the two 5V power pins next to each other, usually at the far end from the 'missing' pin of the nine-pin connector. Some manufacturers reverse the order of pins on the second USB port, so one is arranged Power, Data-, Data+, Ground and the other is Ground, Data+, Data-, Power.

When connecting USB cables to a new motherboard, check the manual carefully. Better still, use a multimeter set to DC volts to check which pins are running at 5V. The wires in the cable are generally coloured red to show when

they are used for power. There is also a useful article about connecting front USB connectors at www.directron.com/installusb.html.

PS/2-to-USB adaptors, usually supplied with new mice, will not necessarily work with all devices. They work only if the keyboard or mouse has been designed to work with both a USB and PS/2 connection. However, if the keyboard used to work with the adaptor, it should be compatible with it. It is more likely that the adaptor has burnt out or shorted as a result of too much current.

You may find shorted leads in the front-panel USB cables. Check each possible combination of pins for a short circuit, using a multimeter set to resistance, before using again. It should be safe to try the keyboard in the motherboard's PS/2 keyboard connector to see if it is still working.

You may have permanently damaged the fourth and fifth USB ports, which are those on the shared header and the right-most connectors, furthest from the PS/2 keyboard, on the back of the motherboard. A damaged USB port could easily damage other equipment, so you should avoid using these ports.

Why can't I send mail from WiFi hotspots?

Q When I take my laptop to a wireless hotspot, or use someone else's WiFi connection, I can receive emails but I cannot send them. Can you explain why this is, and what I can do to resolve this? I am currently using Windows Vista with Windows Mail as my email client.
Perry Cardey, p.cardey@ntlworld.com

A The problem you have sending mail has its root in the way that email servers work, and how they have been set up to avoid spam.

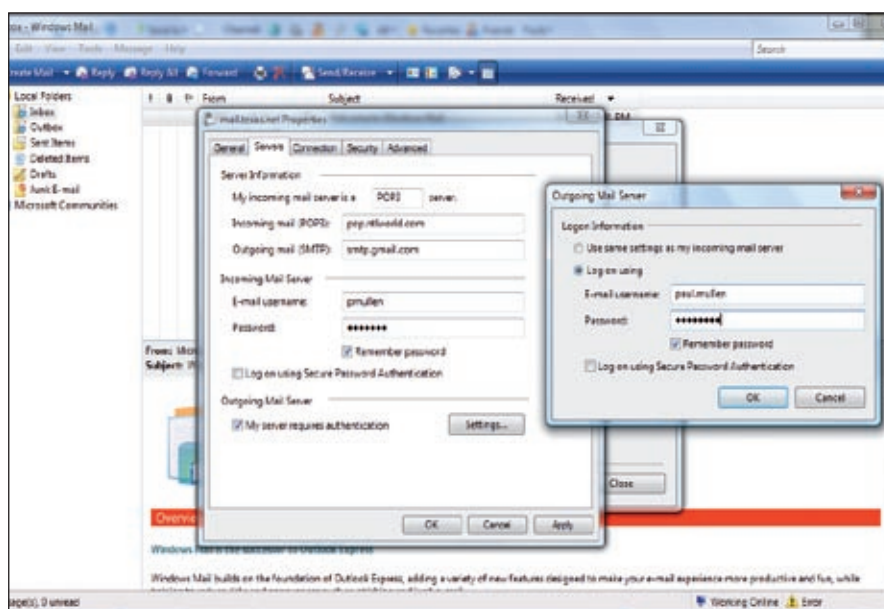
Originally many internet email systems included a POP server, from which you collected your incoming mail, and an SMTP server through which you would send outgoing email. While the POP server required users to log in with a username and password, traditionally SMTP servers allowed you to send mail without logging on.

Unfortunately, people started sending spam, and spammers found that they could send as much mail as they wanted through any SMTP server in the world. So internet providers had to find ways to stop anyone except their own customers from sending email through their servers.

The best way to do this would have been to require senders to sign into the SMTP server in the same way they had to sign into the POP server to collect their mail. Unfortunately, at that time, many email programs were not designed with an option to provide a username and password when sending email, although almost all do now. As a result, many internet providers set their outgoing mail servers to accept mail only from users who had dialled up or otherwise connected using the ISP's own services.

FIGHTING THE ZOMBIES

The Office of Fair Trading together with the US Federal Trade Commission are encouraging all internet service providers to stop spam-sending 'zombies', which are computers that have been infected by a virus and then fallen under the control of the virus writer. They recommend preventing the use of port 25 for any outgoing mail except that sent through the ISP's own SMTP servers. Most UK internet providers now comply. This would perhaps explain why you can send mail from home, on a Virgin Media connection, but not from other locations that use different internet service providers.



▲ Change the outgoing mail server on the Servers tab and choose the 'Log on using' option in the window that appears, along with your username and password

This problem affects many laptop users, so many ISPs now offer an alternative way to send email. Some servers, such as smtp.btinternet.com, allow you to select 'log in to authenticate' and then accept mail sent from (almost) any internet connection. You will probably have to change the SMTP port from 25 to 587 if you are not connected through a BT connection.

Some companies provide a separate outgoing email server that requires a secure SSL connection. These servers usually use the same username and password as the POP3 server, but a different port number. Virgin Media doesn't offer either alternative for NTL World customers, although authentication is available for former Telewest (Blueyonder) customers.

Virgin Media suggests using web-based email to send messages when you're away from home. An alternative is to create a free Google Mail account and use that to send your email. You can send mail through Google and still use your NTL World address. If you switch to Google Mail for everything, you needn't worry about changing your email address if you switch to a different internet provider. Google can even collect mail sent to your NTL World email address.

USING GOOGLE MAIL

If you don't already have one, sign up for a free Google Mail account at www.gmail.com. Once

you are logged into your account, click the Settings link at the top-right of the screen, then click Forwarding and POP/IMAP. Enable POP access, even if you don't want to download using POP. Doing so will also enable SMTP access. Scroll down to the bottom of the page and click Save Changes.

Next, while still viewing the Settings page, click on Accounts. You can add another email address and specify your NTL World address. To verify that you own this account, you have to enter a confirmation code that Google will email to your NTL World mailbox. Once you have entered the confirmation code, you can make the NTL World account the default. Email that is sent through Google will then appear to come from your NTL World address.

Open Windows Mail, click the Tools menu and select Accounts. The settings are fairly complicated to get right, so we suggest that you first add a new email account and then enter your Google Mail account details, following the instructions provided by Google at <http://tinyurl.com/28ghvt>. Try sending and receiving some test email messages.

Once you have this working, click Tools and Accounts again. Highlight your NTL World email account and click Properties. Click on the Servers tab and then change the outgoing server to smtp.gmail.com. Where it says Outgoing Mail Server, you need to select the 'My server requires authentication' option, then click the Settings button next to it. In the window that appears, choose the 'Log on using' option and enter your Google username. This is the part of your email address before the @ sign. Enter your password, too, then click OK.

Return to the Properties window and click the Advanced tab. For outgoing mail, enter the port number 465 and tick the box next to 'This server requires a secure connection (SSL)'. Then click OK. All your outgoing mail will be sent through Google's servers, but will still have your NTL World address on it. This means mail can be sent from any internet connection.

Feedback Resizing image to digital photo frame

Further to your response to Alan Green's letter regarding the resizing of images to go on his digital photo frame (*Helpfile, Shopper 230*), I was prompted to release a software tool called Picture Resizer, which is ideal for the job. See <http://tinyurl.com/2d4q2w>.

I had developed a rough draft for myself, but when I realised others could also benefit I decided to add some polish and release it to

the public free of charge. I plan to continue developing this tool and will add new features in future.

Readers may also like to try Multiple Image Resizer .NET from www.multipleimageresizer.net. Both programs are easier to use to process multiple images than Microsoft Paint and most other image-editing programs.

Neo, support@neolics.com

Vista does not recognise my processor

Q I have an Acer E380 PC. It was bought as a cheap computer for the kids to do their homework on. However, when I tried to run a first-person shooter on it I found that it was not powerful enough, so I had to make some modifications. I upgraded the memory on the Acer AM2 motherboard to 2GB. I also upgraded the graphics card from an Nvidia 7500le to an Asus EAX1950 PRO.

This kept me happy for a while, but before long I started looking for a faster processor. I tried the Acer website, and also emailed the company to ask what processor would fit. Acer was most unhelpful.

Originally, I had an AMD Athlon 64 X2 4200+, which I wanted to upgrade to an X2 6000+. I tried to find out if I would need a BIOS update, but Acer was not able to tell me, and its website is virtually hopeless.

All the data that it does provide can be found using the excellent CPU-Z program that I installed.

Anyway, I bit the bullet and bought the X2 6000+. My local shop installed it for me, together with a nice big cooler. According to Windows, the processor is working and the drivers are up to date. However, when you go to the Windows Experience index in Vista, it says that the processor is unknown.

CPU-Z has recognised the processor and displays its part number and a clock speed of just over 3GHz. I would like to know if this situation will affect the performance of the processor? Furthermore, is there a way of getting Windows to recognise the processor properly, perhaps with a newer BIOS? If a BIOS upgrade is needed, how do I do it?

Jason March,
jason@jasonmarch.orangehome.co.uk

A Vista relies on the motherboard's BIOS to recognise the processor. If Vista says 'processor unknown' then you'll probably need a BIOS update that recognises the processor. This won't affect the performance of the system. It could affect the temperature at which the processor runs, though.

Check that AMD's Cool'n'Quiet feature, which adjusts the processor speed according to its workload, is working. You can download the AMD Clock utility from the Support and Drivers section of www.amd.com to view the processor speed. Vista has built-in support for the feature, so no new Vista driver is needed.

Acer's website (<http://support.acer-euro.com>) does not seem to have any BIOS updates for this motherboard. There is one on Acer's FTP site, but apparently different revisions of the motherboard need different BIOSes, so make sure you get the right one.

Setting the processor speed after a CMOS battery failure

Q At *Computer Shopper's* suggestion, a few years ago I bought a Carrera Octan 2800 AIW PC. For some reason I've got it in my head that this contains a 2.4GHz AMD processor, although the original paperwork suggests it contains a 2.8GHz processor. A few weeks ago, the CMOS battery failed and this resulted in all the BIOS settings reverting to their defaults. At that time, the processor speed reported by SiSoftware Sandra and Windows itself was, I think, around 1.4GHz.

Digging a little deeper, I found that the bus speed was set at 100MHz. I had also recently upgraded the RAM, which I think runs at a bus speed of 200MHz (400MHz internal). I tried setting the bus speed at 200MHz, but it would not even allow the boot process to start.

I looked at some other settings in the BIOS and found an overclocking section, which I have no interest in. However, I experimented with a few multipliers, after reading some articles on bus speeds, and each time the PC would not boot.

I eventually set the bus speed to 133MHz. It seems to run reliably at this speed, but Windows reports the processor as an AMD Athlon XP 2200+ 1.80GHz processor, so I'm still short of the correct speed. The memory is reported as running at 400MHz during the boot process, so presumably this is correct.

I'm very confused by all the various bus speeds, multipliers and so on, and don't know how to set the BIOS correctly. Please can you help?

Phil Beed, via email

A In the days of Pentium, Pentium 2 and K6 processors, a processor had just one set of bus lines that communicated with the outside world. This was the frontside bus (FSB). FSB speeds rose

first to 66MHz, then to 100MHz and even 133MHz, but the speed of memory access became a big bottleneck.

Intel invested heavily in the expensive but relatively fast Rambus memory, signing an agreement that prevented AMD using the Rambus technology. AMD countered with double data rate (DDR) memory, which transfers two bits of data per clock signal. This was able to keep up with Rambus.

To cut a long story short, AMD came up with the idea of integrating the memory controller into the central processor chip, which enabled a processor to have a separate memory bus that could be run at a higher speed. So Athlon processors have separate bus lines running at different speeds for memory and motherboard chipset access.

BUS STOP

The DDR memory bus clock speed is set to half the speed of the memory, so with 400MHz-rated DDR memory it would run at 200MHz. The FSB that connects the processor to the motherboard chipset ran originally at 100MHz, then 133MHz, 166MHz and finally 200MHz. In your computer, it should be running at 166MHz.

In fact, at least two different Athlon XP processors were given the 2800+ speed rating. The first one, which appeared in January 2003, used the Thoroughbred B core with a 256KB L2 cache and ran at a clock speed of 2,250MHz with a 166MHz FSB and a multiplier of 13.5. This was then replaced by the Barton core, which had a 512KB L2 cache and a slightly lower clock speed. The Barton 2800+ processor also ran at 166MHz bus speed, but with a 12.5 multiplier, giving a clock speed of 2,083MHz.

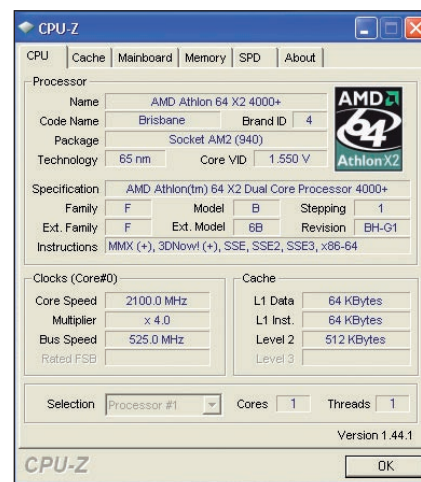
Higher speed-rating processors with the Barton core run at an FSB of 200MHz. It sounds as if you have the earlier Thoroughbred chip. However, if you would like to know for certain which processor you have, you should try the

CPU-Z program, which is available from www.cpuid.com/cpuz.php.

Most motherboards are designed to detect the correct settings for a processor automatically. This may be entirely automatic, as it is with most Dell, HP and other major brands, or there may be a BIOS option to load default values. If your BIOS setup program offers two sets of default values, these will be for 'fail-safe' (slow but reliable) and 'optimised' (best), but often the setup program and the manual do not make it clear which is which.

BIOS ISSUES

As computer manufacturers try to gain competitive advantage using the latest processors, the processor may be too new for the original motherboard BIOS to recognise automatically. In these cases, there may be a later BIOS update from the computer manufacturer or the motherboard manufacturer. **CS**



▲ Use the CPU-Z program to find out which processor you have